

CITY OF HELENA, MT 2017 GHG INVENTORY

PRELIMINARY DRAFT
DO NOT QUOTE OR CITE
FEBRUARY 14, 2019

PATRICK JUDGE
MORGAN SHIMKUS

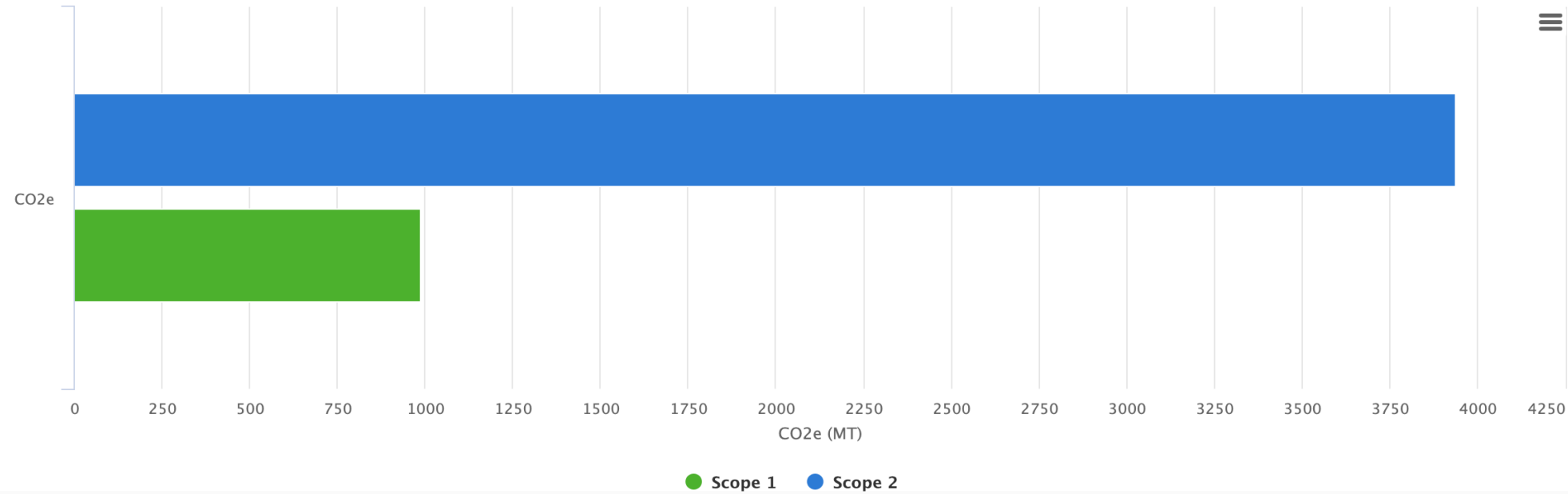
BACKGROUND AND NOTES

- Current analysis limited to City of Helena municipal government
- Electricity & natural gas data obtained through DEQ EnergyCap (Dave LeMieux)
 - Electricity Usage = 10,548,189 kWh (1.2 aMW \approx 1200 households)
 - Natural Gas Usage = 186,240 Therm (\approx 155 households)
 - Gasoline & Diesel Usage = 189,643 Gal (\approx 146 households)
- Electricity “factor sets” currently based on NWPP WECC Northwest:
 - CO₂ – 819.21 lb/MWh
 - CH₄ – 15.29 lb/GWh
 - N₂O – 12.50 lb/GWh
 - CO₂e – 823.40 lb/MWh (sum of previous WITH GWP weightings)
- For now: “Scope 1” = natural gas, “Scope 2” = electricity
- 2018 transportation data obtained through Facilities Director Troy Sampson

Inventory By Scope

CO2e by scope for the selected inventory year.

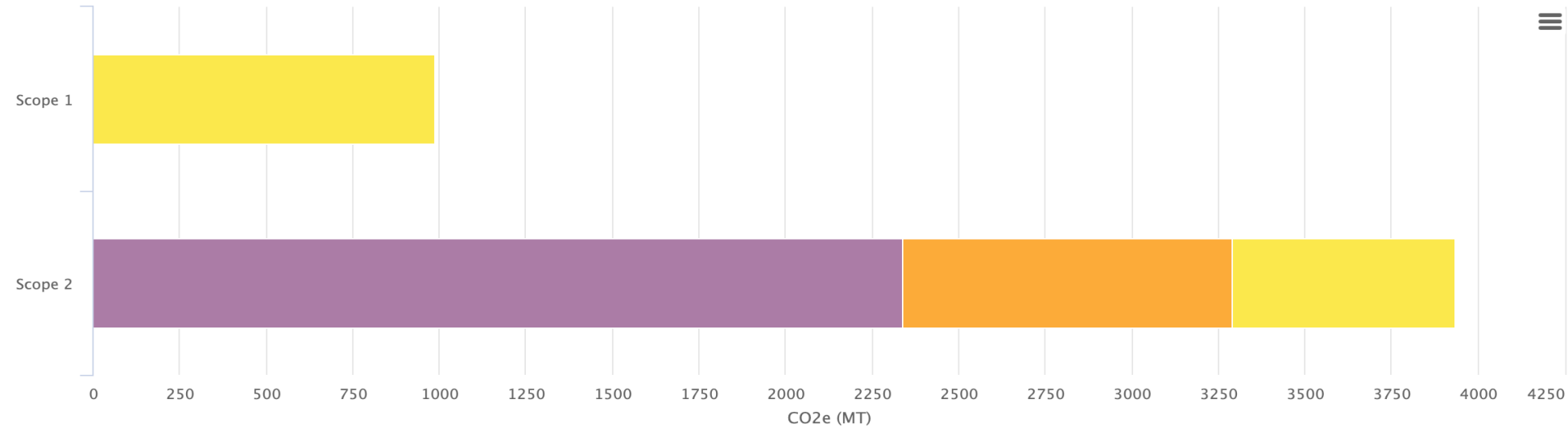
Scope	CO2e
Scope 2	3,936
Scope 1	989



Inventory By Scope And Sector

CO2e by scope and sector for the selected inventory year.

Scope	Sector	CO2e
Scope 1	Buildings & Facilities	989
Scope 2	Buildings & Facilities	644
Scope 2	Street Lights & Traffic Signals	951
Scope 2	Water & Wastewater Treatment Facilities	2,340



Screenshot



Water & Wastewater Treatment Facilities



Street Lights & Traffic Signals

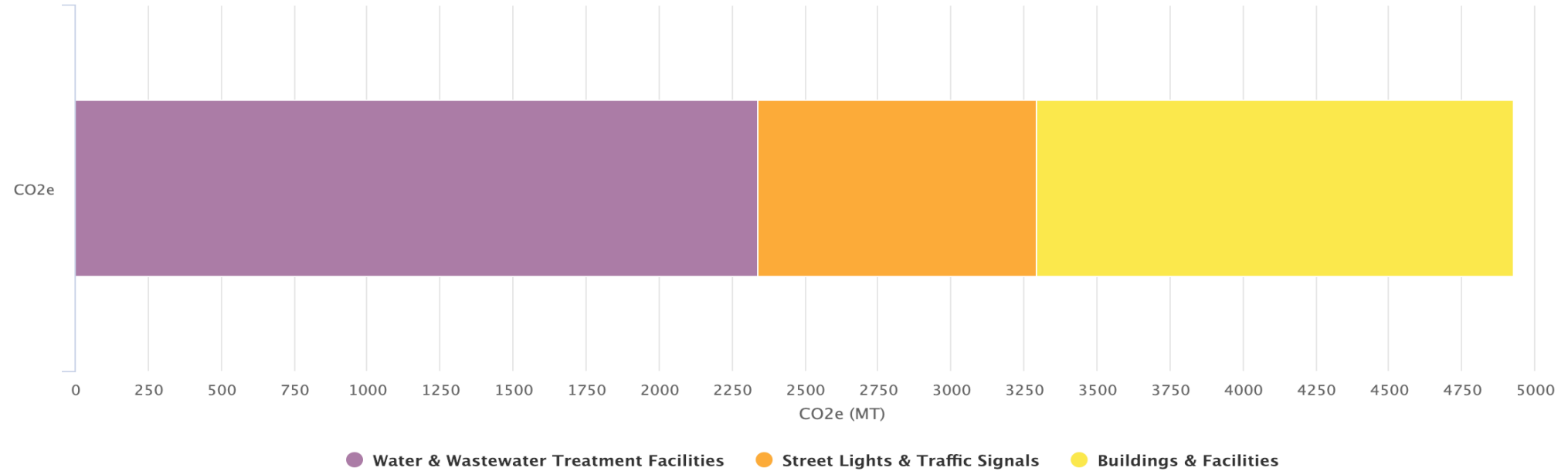


Buildings & Facilities

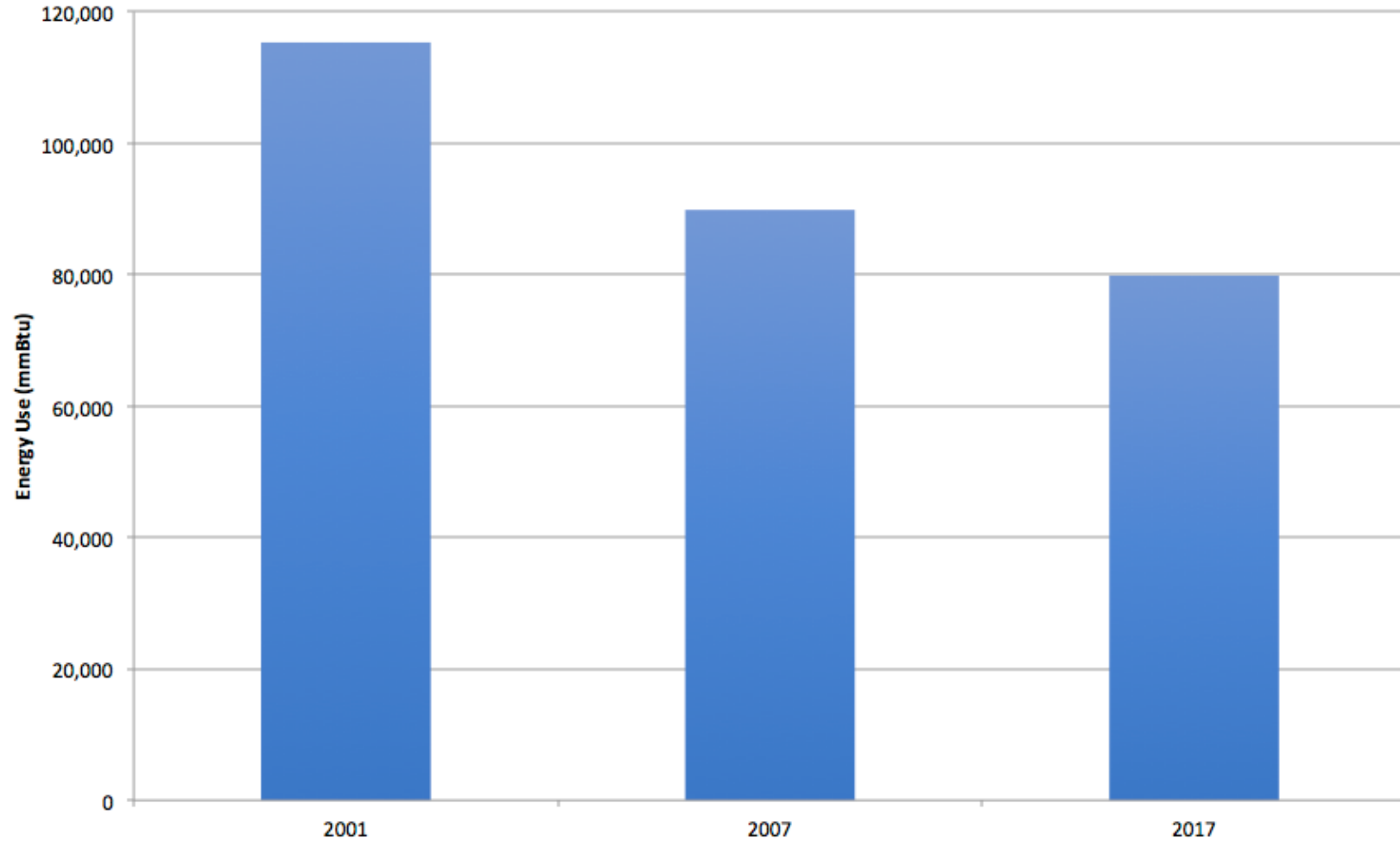
Inventory By Sector

CO2e by sector for the selected inventory year.

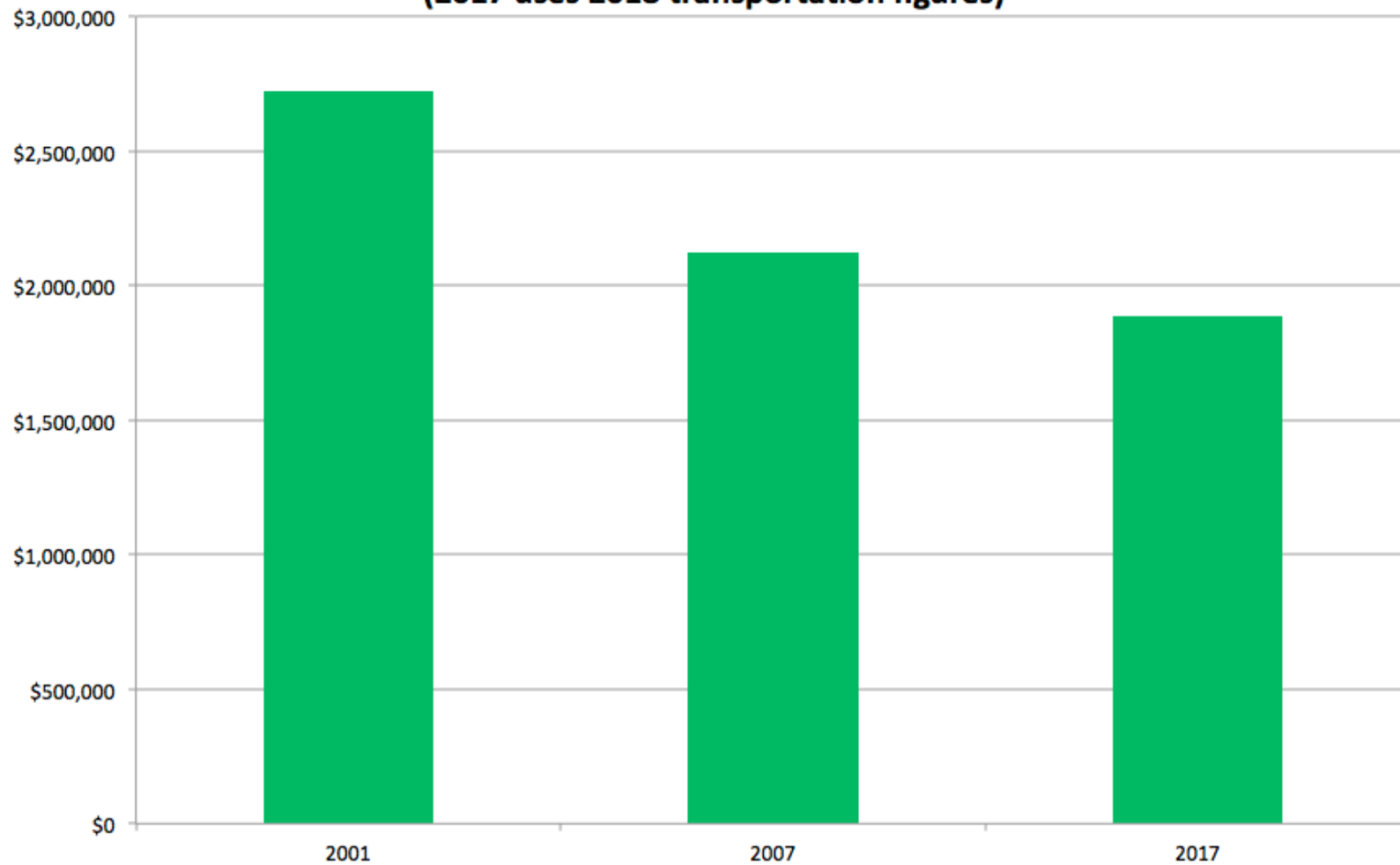
Sector	CO2e
Buildings & Facilities	1,634
Street Lights & Traffic Signals	951
Water & Wastewater Treatment Facilities	2,340



**City of Helena Municipal Govt Energy Usage
PRELIMINARY ANALYSIS
(2017 uses 2018 transportation figures)**



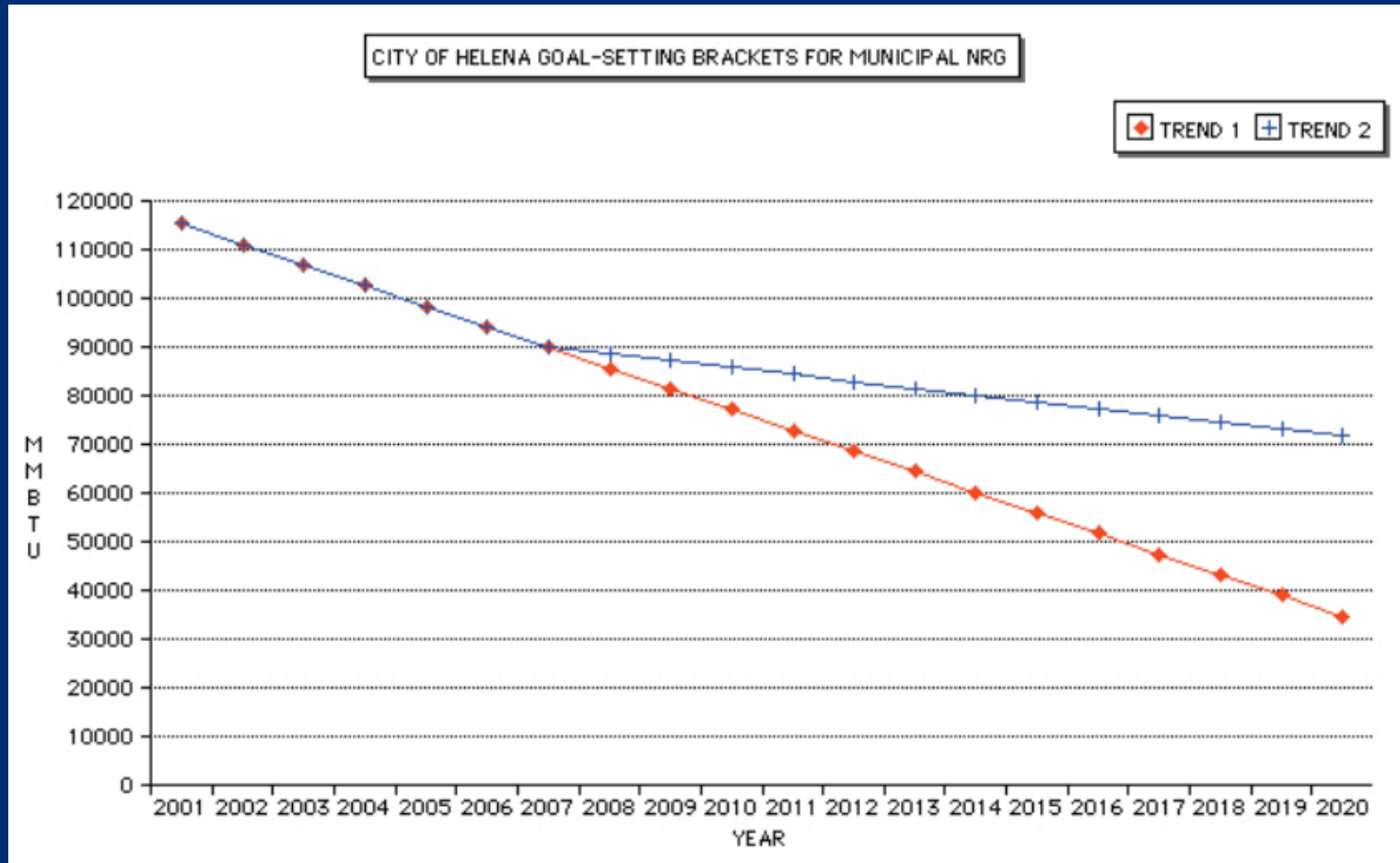
City of Helena Municipal Govt Energy Costs at \$23.60/mmBtu (2007)
PRELIMINARY ANALYSIS
(2017 uses 2018 transportation figures)



SUMMARY TABLE

2017 ENERGY SOURCE	AMOUNT	AVG PRICE	TOTAL	MMBTU	CO2e
ELECTRICITY	10,548,189 kWh	\$0.11/kWh	\$1,157,829	35,990	??
NATURAL GAS	186,240 therm	\$0.75/therm	\$140,407	18,624	??
GASOLINE	71,097 gal	\$2.64/gal	\$187,766	8,884	??
DIESEL	118,546 gal	\$2.85/gal	\$338,447	16,364	??
2017 TOTAL			\$1,824,449	79,862	??
2007 TOTAL			\$1,990,059	89,856	10,397
2001 TOTAL			\$1,233,607	115,341	12,691

2009 CLIMATE ACTION PLAN (Appendix H)



NEXT STEPS

- Complete and refine the analysis
 - refine factor sets, input the 2017 transportation figures, add commute & waste
 - verify trends by checking sub-categories for the test years
 - consider analyzing additional years to confirm trends
 - systematize data collection & verify categories for some of the accounts
- Expand analysis to broader community – Morgan!
- Proceed with other ICLEI Milestones
 - update emissions targets and local action plan (ICLEI review)
 - implementation, monitoring, verification
- Questions?